

Patent Claims

1. A vacuum switching chamber for switching short-circuit currents in the low-voltage range,
5 comprising: a stationary contact tip and a contact tip which can move axially with respect to it, each having an associated power current connection, and an enclosure which surrounds the contacts, with the power current connection of the moving contact
10 tip being in the form of a cylindrical bolt, and with the enclosure having rigid metal parts, an annular insulator and a resilient gas-tight metallic separating wall, and these enclosure parts being connected to one
15 another in a specific arrangement and being connected in a gas-tight manner to the power current connections of the contact tips, and surrounding one of the rigid metal parts together with both the stationary contact tip and the moving
20 contact tip, characterized in that the power current connection of the stationary contact tip (6) is in the form of a plate (1), in that the metal part (3) which surrounds the two
25 contact tips (6, 7) is tubular and is connected at the end to the plate (1), and in that the resilient, metallic separating wall comprises a membrane (5) which is provided with concentric corrugations, is in the form of a disk, and
30 is soldered on one side to the power current connection (which is in the form of a bolt (2)) of the moving contact tip (7) and on the other side via an axially running annular flange (51) to the annular insulator (4).
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2. The vacuum switching chamber as claimed in claim 1, characterized

in that, for a switching movement of 3 to 5 mm, the membrane (5) has

- a wall thickness s of between 0.1 and 0.2 mm,
- a corrugation depth t of approximately half the switching movement, and
- a number Z of full corrugations, which satisfy the condition

$$Z \geq 1 + \text{integer} \left(\sqrt[3]{[(D_A - D_B) s]} \right), \text{ at least } 3,$$

where

- 10 D_A = external diameter of the membrane [mm]
- D_B = diameter of the power current connecting bolt of the moving contact tip [mm] and
- s = thickness of the membrane [mm].

- 15 3. Vacuum switching chamber as claimed in claim 1 or 2, characterized in that the contact tips are in the form of flat spiral contacts (6, 7).